"What does an entomologist do? I am not exactly sure, but I always wanted one on call during the Zika outbreak"

Navy Entomology Brief History

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The Navy's Entomology Officers have a proud and strong history of being boots on the ground alongside warfighters. Navy Entomology support of U.S. military operational activities began in World War II with the importance of military entomology clearly demonstrated in the Pacific Theater. A war with Japan committed troops to remote locations with numerous vector-borne diseases, such as malaria, resulting in unacceptable casualties. Successful response to this threat would require establishing an effective medical force to include professionals from allied medicine fields, including entomology. As result, the Navy Medical Department created the Hospital Volunteer Specialist Group, H-V(S) in 1941 and commissioned LTJG William K. Lawlor and LT Paul Woke as the first Navy Entomologists.

In April 1942, Navy Entomologists would be called on to support a battalion of Marines that occupied Efate Island in the New Hebrides. Malaria was proving to be a greater threat to the Marines than the advancing Japanese with up to 65% of every service member suffering from the disease. Recognizing the impact on combat effectiveness and inability to efficiently reinforce units, the Navy developed Navy Epidemiology Unit (NEU) field laboratory teams to control this disease. In August 1942, Ensign Kenneth L. Knight, who later became the Officer in Charge of Preventive Medicine Unit No. 1, was deployed to Efate as part of a NEU and the first Navy entomologist to work in a combat zone. Within a year the malaria case rate had declined to essentially zero, demonstrating the success of the NEU's contributions.

During this time, in addition to the South Pacific, Navy Entomologists served in China, North Africa, the Caribbean, and Central America. Their mission was extremely challenging and certainly not without risk. Two Navy Entomologists lost their lives during the conflict. LT William M. Gordon was killed by mortar fire on Los Negros (Admiralties) on 5 March 1944 and LT John D. Maple died in an airplane crash while directing aerial spray operations on Okinawa in April 1945.

Following WWII, a handful of Entomologists remained on active duty. The Navy Medical Department disbanded the H-V(S) section and established the Medical Service Corps in 1947. Most of the Navy Epidemiology Units were also disestablished after the war. One that remained was the Malariology and Pest Control Unit located at Naval Air Station Banana River, Florida. Establishment of this unit would mark the beginning of over 70 years of mission growth and evolution. In 1947, the Malariology and Pest Control Unit was re-located to Naval Air Station Jacksonville, Florida. It was then commissioned the Malaria and Mosquito Control Unit No. 1 on 1 July 1949 with LCDR John M. Hirst (Navy Entomologist) assigned as the first Officer in Charge. In 1952, the Unit was renamed Preventive Medicine Unit No. 1 (PMU-1). PMU-1 became the Disease Vector Control Center (DVCC) in 1957 and was assigned an expanded mission and area of operation to include roughly half the world. During the same year, a sister unit was established in Alameda, California (DVCC-Alameda) and assigned responsibility for supporting the remaining portion of the globe.

In addition to their contribution in WWII, Navy Entomologists have been called upon to help reduce disease non-battle injury (DNBI) rates during the war in Vietnam and the Korean Wars, Desert Storm, Operation Enduring Freedom, and Operation Iraqi Freedom, Operation New Dawn and continuing worldwide peace-keeping missions and humanitarian operations.

What Entomologists Do

Navy Entomologists are unique as they are the only federally authorized uniformed officers in the Department of the Navy (DoN) charged to lead operational pest management and oversee the Navy's Department of Defense (DoD) Pesticide Application Certification program. Additionally, Navy entomologists are the Navy's managers for the Navy Shipboard Pest Management program that trains shipboard medical representatives in pest surveillance and control and are tasked with evaluating and approving all shipboard pest management materiel for BUMED.

Today's Navy Entomology community is a diverse group of highly skilled officers with graduate degrees ranging from field ecology and vector control to trained molecular scientists. Navy Entomologists can be assigned to one of the four Navy Environmental Preventive Medicine Units (NEPMU) and the Navy Entomology Center of Excellence (NECE) that support theater specific readiness through entomological technical assist visit support services ranging from pest inspections aboard ships to comprehensive vector surveillance and control support to forward basing areas that support theater-specific force readiness, pest management training, and reviewing Navy installation pest management plans to ensure effective and safe pest management practices that align with federal and DoD requirements. At a NEPMU they can be assigned to the Forward Deployable Preventive Medicine Units (FDPMU) and are involved in a rigorous training pipeline to meet the unit's essential tasks. These entomologists are called upon to deploy globally as a small modular vector control team or with the complete FDPMU to support the force health protection needs of larger contingency operations. Those assigned to one of the Marine Corps Medical Battalions are responsible to man, train, and equip the preventive medicine vector control teams that support the Marine Expeditionary Force. Entomologists typically teach critical skills to PMTs through Operational Preventive Medicine Training and scheduled theater security exercises. Research entomologists with a PhD serve at the Navy Medical Research Command, Navy Medical Research Units and collaborate with the host-nation Ministry of Health and international agencies, the Navy Marine Corps Force

Health Protection Command's (NMCFHPC) detachment at the Centers for Disease Control and Prevention Entomology Branch that is involved in the research efforts supporting the President's Malaria Initiative. Academically, PhD Entomologists can be assigned to the Uniformed Services University of the Health Sciences. Entomologists engaged in Navy and DoD strategy and policy are assigned to the Navy and Marine Corps Force Health Protection Center (NMCFHPC) and the Armed Forces Pest Management Board (AFPMB). The NMCFHPC advises policy and validates taskers to support public health initiatives across the Navy and Marine Corps and the Armed Forces Pest Management Board (AFPMB), a joint directorate under the Office of the Secretary of Defense, is the technical authority on all matters relating to pest management in the DoD. Traditionally, Entomologists successfully serve in a variety of Executive Medicine and other key Navy leadership roles.

As the Navy's SMEs for operational pest control, we were the first Medical Service Corps officers to respond to controlling vectors of West Nile virus, to conduct worldwide vector surveillance and control during the Zika outbreak and have provided responses to invasive species control at installations. We also review deployable pest management materiel lists to identify gaps, then evaluate pest management materiel for procurement to ensure deployable platforms are 100% ready to support worldwide operations.

With approximately 38% of entomology billets being operational, the Navy and Marine Corps rely on us during combat operations to lead teams of Preventive Medicine Technicians traveling throughout the area of operations to improve morale and mitigate disease risk at forward operating bases.

In the past 2 years alone, Navy Entomologists have continually deployed worldwide to support operational forces directly and are currently engaged conducting research for strategic interests. A few examples are listed below.

Direct operational support:

In Australia, they support Marine Rotational Force – Darwin 22.

They provide continual support to Camp Lemonnier, Djibouti, for Naval Forces Africa and U.S. Africa Command (USAFRICOM).

Navy Entomologists deployed as a European Command (EUCOM) asset for Operation Assure, Deter, and Reinforce to support NATO allies assisting against Russian war advances in Ukraine.

Navy Entomologists were there for Operation Allies Refuge/Welcome during the U.S. transition out of Afghanistan.

Through participation in Balikatan 22 in the Philippines, Navy Entomologists worked with Armed Forces of the Philippines Veterinarians to provide vector-borne disease and control training.

In support of Task Force Koa Moana, they deployed throughout the Pacific Islands.

In support of USAID operations, they were part of a FDPMU ensuring JTF – Bravo, JTF – Haiti, and U.S. Southern Command (USSOUTHCOM) force health protection.

Strategic engagements:

Navy Entomologists are engaged in the Global Emerging Infections Surveillance (GEIS) program addressing militarily relevant infectious disease threats and informing force health protection decision making. They also work with the Center for Global Health Engagement's Global Health Research Initiative (GHERI) in support of USAFRICOM and the Africa Malaria Task Force.

In alignment with DoD strategic interests and in coordination with the AFPMB, Navy Entomologists recently developed and now lead as the Chair of the newly established Climate Change Sub-Committee. This committee, the first of its kind, is coordinating multiple government agencies to collaborate and share regional pest and vector information to establish baseline pest data that will be tracked and recorded to determine regional pest shifts and allow installations to proactively mitigate operational risks.

Navy Entomologists at commands and units within the U.S. Indo-Pacific Command (USINDOPACOM) AOR are actively engaged with U.S. Transportation Command to mitigate biosecurity threats and working to assist operational commands to prevent frustrated munition and materiel shipments due to pest infestations.

The Future of Navy Entomology

As we look to the future and as the DoD and DoN evolve, our officers have set their coordinates and are navigating the community as a High Reliability Organization. Entomologists are leading 'Get real, get better' initiatives in support of newly developed maritime deployment strategies laid out in the Navy's North Star, expeditionary forces in the Marine Corps' Force

Design 2030, and the DoD's National Defense Strategy. As their specialty leader I could not feel more confident and prouder of our team, their initiatives, and the future of Navy Entomology.